



SGSO

Address: LIT by CARDI

Client:

LumCAT: 0017440220 RIO 20W 6500K 2000lm

Luminaire:

Report No:

Voltage(V): 230.2200

Test No: KYZ-A251020063-02-001

Current(A): 0.0899

LampCAT: LED

Power (W): 20.0000

Lamp flux(lm): -1.0

PF: 0.9668

Number of Lamps: 1

Ballast type:

Length(mm): -175

Width(mm): -175

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 2000.00

Efficiency(%): 100.00%

Lumens(lm)/Power(W): 100.00

Central intensity(cd): 1021.232

Maximum intensity(cd): 1034.942

Angle of maximum intensity: C=90.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=82.8

[C90/270]Total=82.0

Field angle(10%Imax): [C0/180]Total=139.4

[C90/270]Total=139.9

Maximum s/h(1/2): C0_180=1.13 C90_270=1.07

Maximum s/h(1/4): C0_180=1.19 C90_270=1.12

Up flux rate of lamp(%): 0.74%

Down flux rate of lamp(%): 99.26%

Up flux rate of LUM(%): 0.74%

Down flux rate of LUM(%): 99.26%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 86.609%

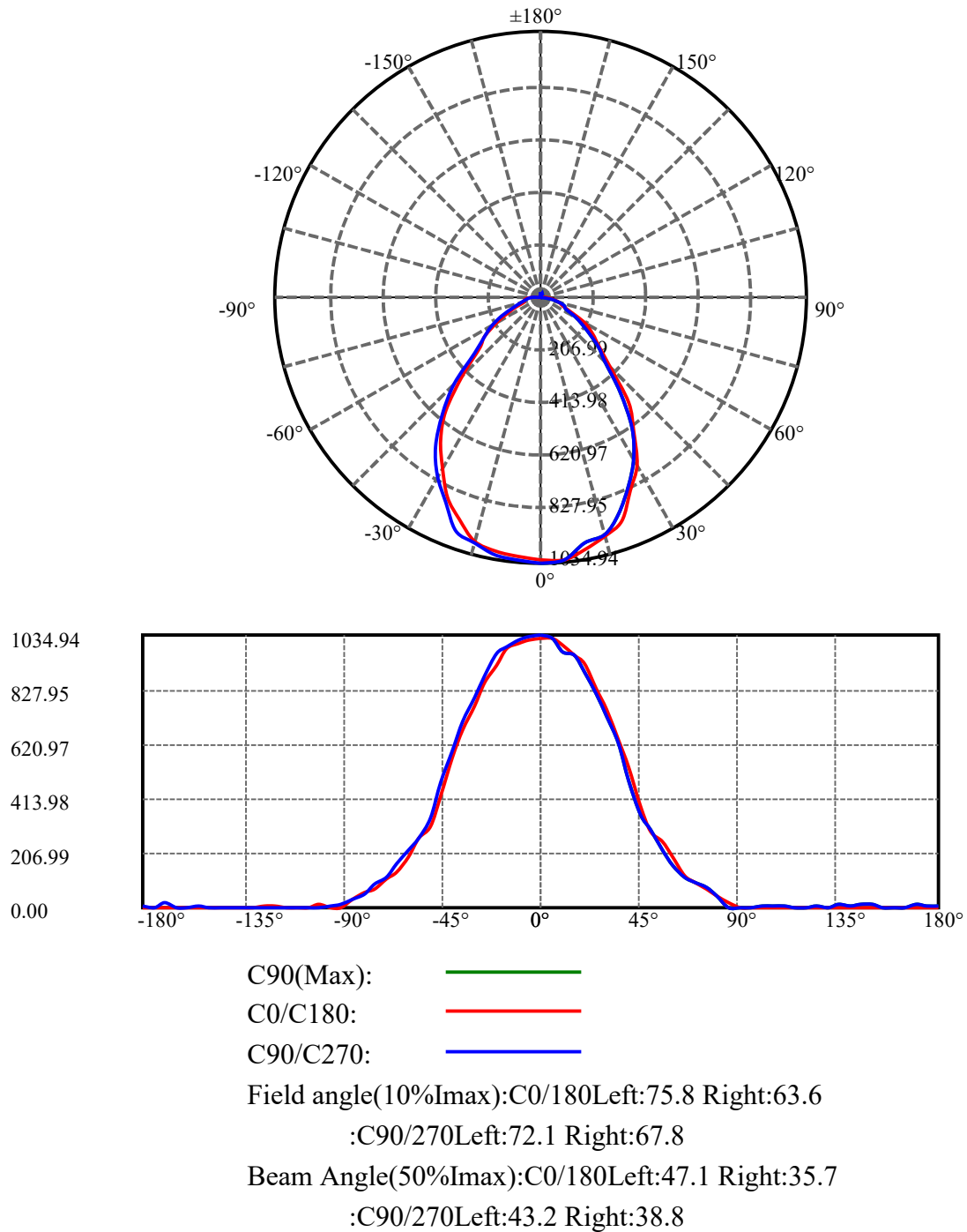
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1057.991	0.000	0	.000%	.000%
5.0	1058.637	24.427	24.427	.000%	1.221%
10.0	1035.235	72.309	96.736	.000%	4.837%
15.0	1001.127	116.610	213.347	.000%	10.667%
20.0	957.228	155.804	369.151	.000%	18.458%
25.0	874.809	185.490	554.64	.000%	27.732%
30.0	787.441	203.071	757.711	.000%	37.886%
35.0	683.019	209.033	966.745	.000%	48.337%
40.0	570.474	201.890	1168.635	.000%	58.432%
45.0	443.026	181.156	1349.791	.000%	67.490%
50.0	341.241	152.982	1502.773	.000%	75.139%
55.0	264.041	127.049	1629.821	.000%	81.491%
60.0	194.695	102.362	1732.183	.000%	86.609%
65.0	146.922	80.170	1812.353	.000%	90.618%
70.0	107.219	62.121	1874.474	.000%	93.724%
75.0	83.817	48.204	1922.678	.000%	96.134%
80.0	57.295	36.450	1959.128	.000%	97.957%
85.0	20.390	20.377	1979.505	.000%	98.975%
90.0	1.506	5.788	1985.292	.000%	99.265%
95.0	2.421	1.038	1986.331	.000%	99.317%
100.0	3.605	1.581	1987.911	.000%	99.396%
105.0	1.130	1.223	1989.134	.000%	99.457%
110.0	3.712	1.222	1990.356	.000%	99.518%
115.0	0.699	1.078	1991.434	.000%	99.572%
120.0	1.022	0.404	1991.838	.000%	99.592%
125.0	4.573	1.248	1993.086	.000%	99.655%
130.0	0.484	1.061	1994.148	.000%	99.708%
135.0	1.883	0.462	1994.61	.000%	99.731%
140.0	3.228	0.914	1995.523	.000%	99.776%
145.0	2.798	0.970	1996.494	.000%	99.825%
150.0	3.874	0.948	1997.442	.000%	99.872%
155.0	1.883	0.703	1998.145	.000%	99.907%
160.0	1.130	0.305	1998.45	.000%	99.923%
165.0	4.788	0.471	1998.921	.000%	99.946%
170.0	7.102	0.681	1999.602	.000%	99.980%
175.0	2.475	0.331	1999.933	.000%	99.997%
180.0	3.013	0.063	1999.996	.000%	100.000%

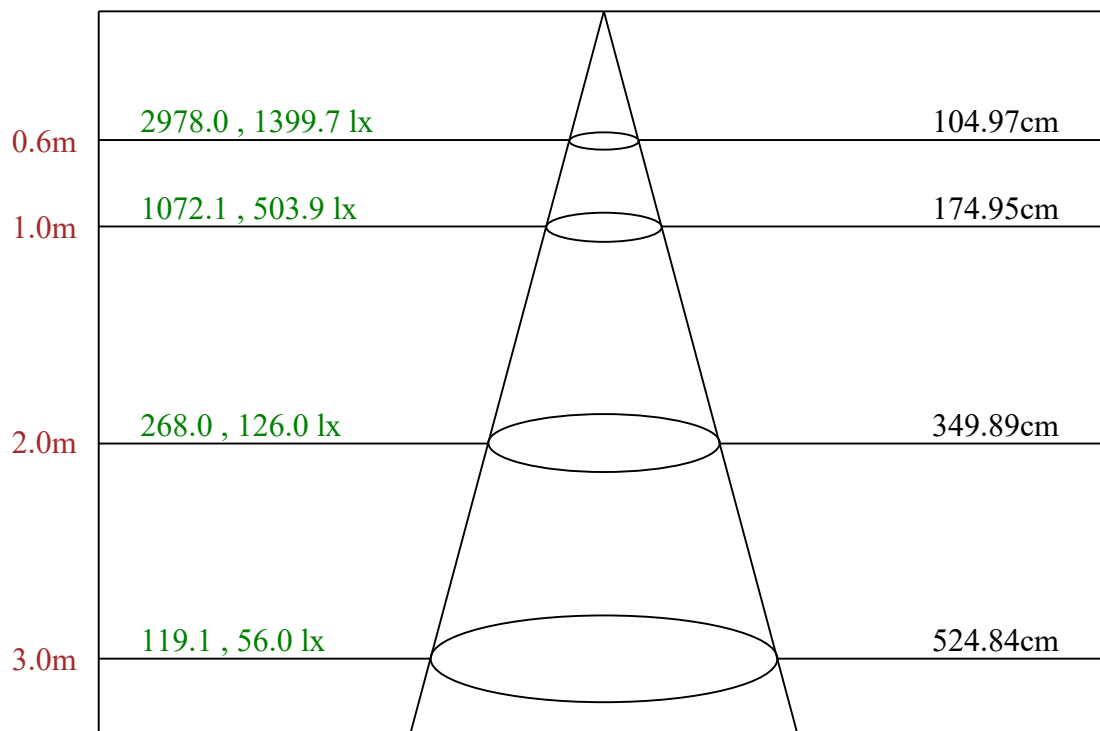
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	757.71	N.A.	37.89%
0-40	1168.63	N.A.	58.43%
0-60	1732.18	N.A.	86.61%
0-90	1985.29	N.A.	99.26%
0-120	1991.84	N.A.	99.59%
0-180	2000.00	N.A.	100.00%
60-90	355.47	N.A.	17.77%
90-120	12.33	N.A.	0.62%
90-130	14.64	N.A.	0.73%
90-150	17.94	N.A.	0.90%
90-180	20.43	N.A.	1.02%
0-53.83	1600.00	N.A.	80.00%

ZONAL LUMEN SUMMARY

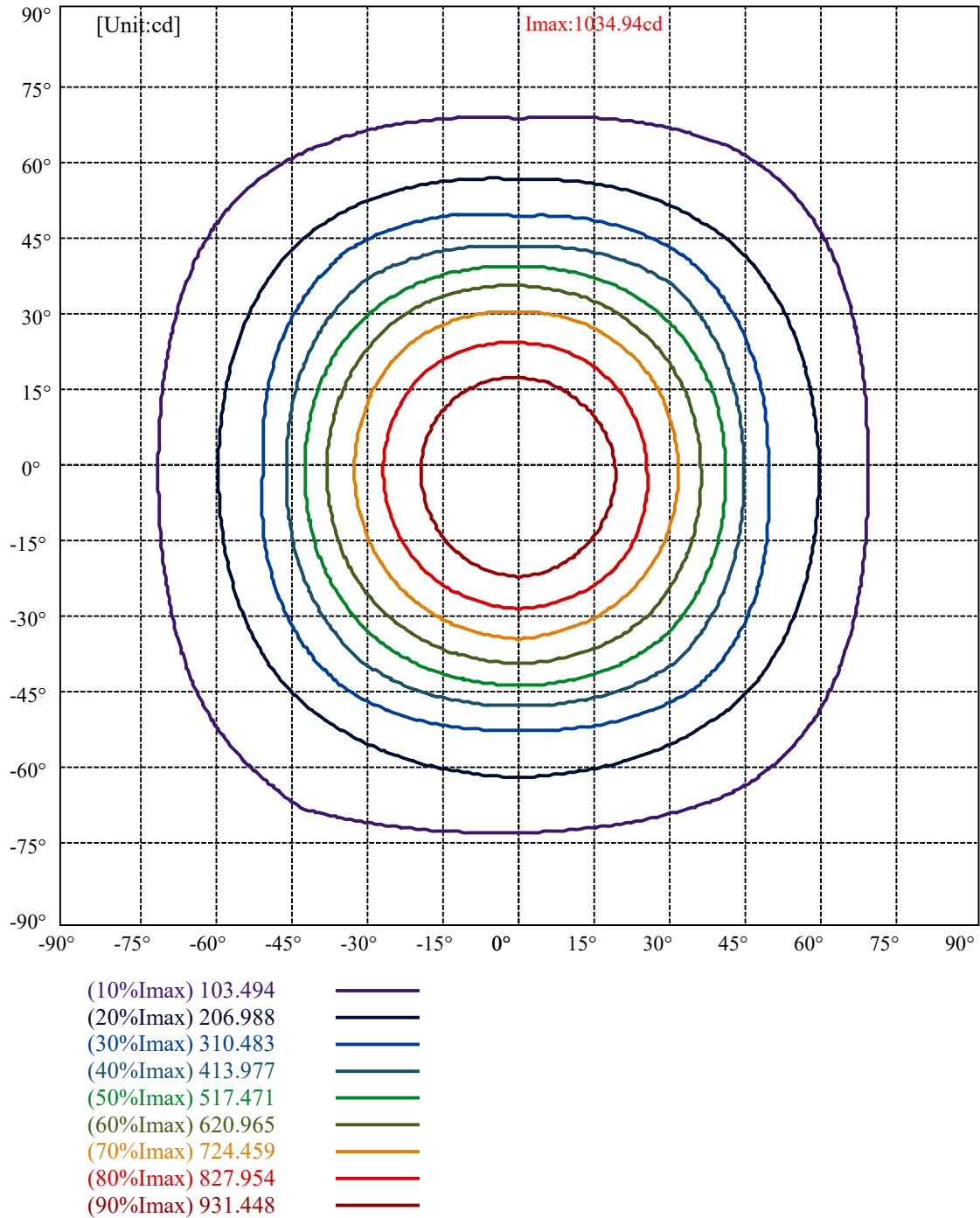
0-10	96.74
10-20	272.41
20-30	388.56
30-40	410.92
40-50	334.14
50-60	229.41
60-70	142.29
70-80	84.65
80-90	26.16
90-100	2.62
100-110	2.44
110-120	1.48
120-130	2.31
130-140	1.38
140-150	1.92
150-160	1.01
160-170	1.15
170-180	0.33

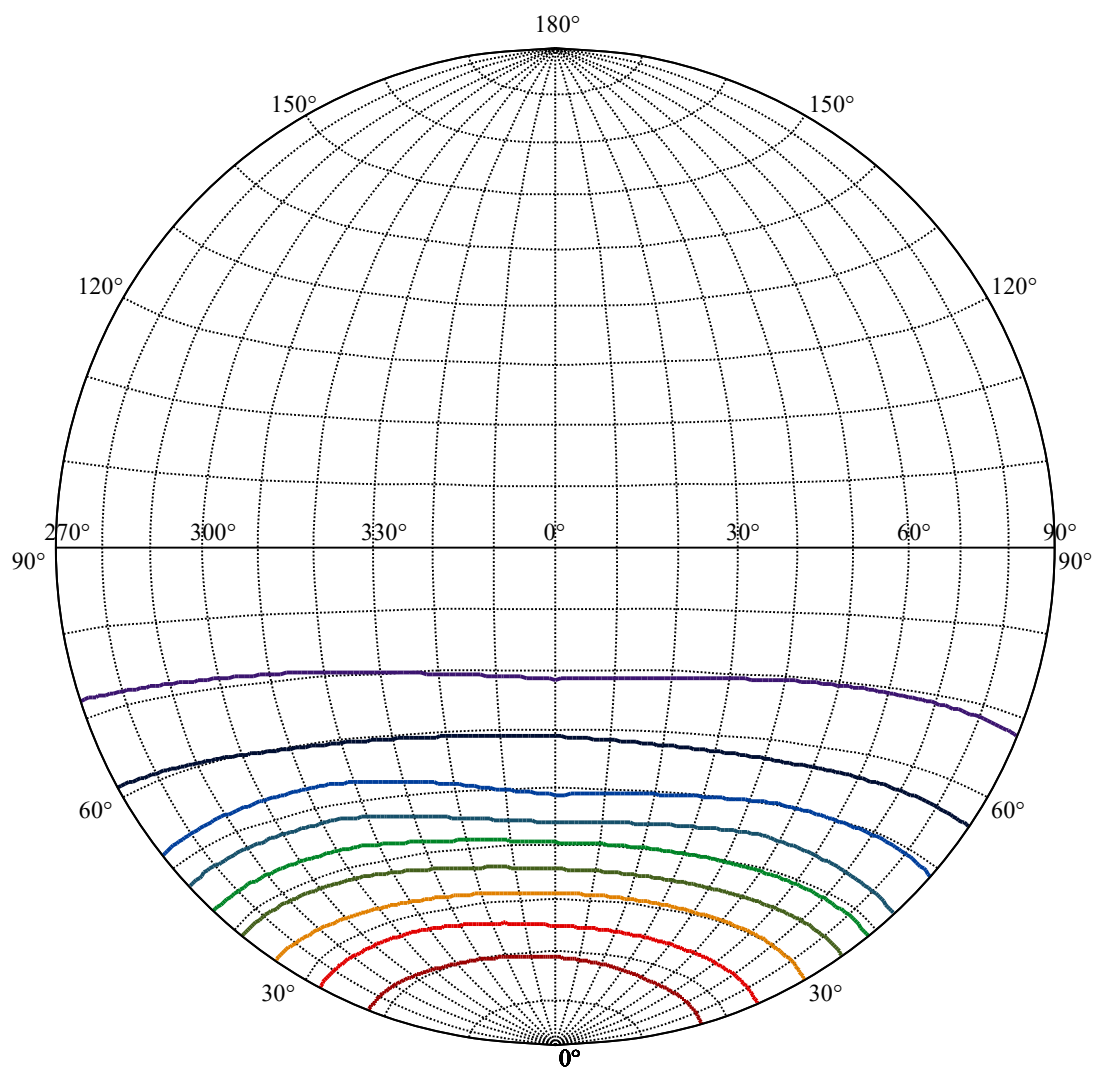




Max , Ave

Beam angle of C90 plane 82.35





[Unit:cd]

Imax:1034.94

(10%Imax) 99.90829

(20%Imax) 199.8166

(30%Imax) 299.7259

(40%Imax) 399.6341

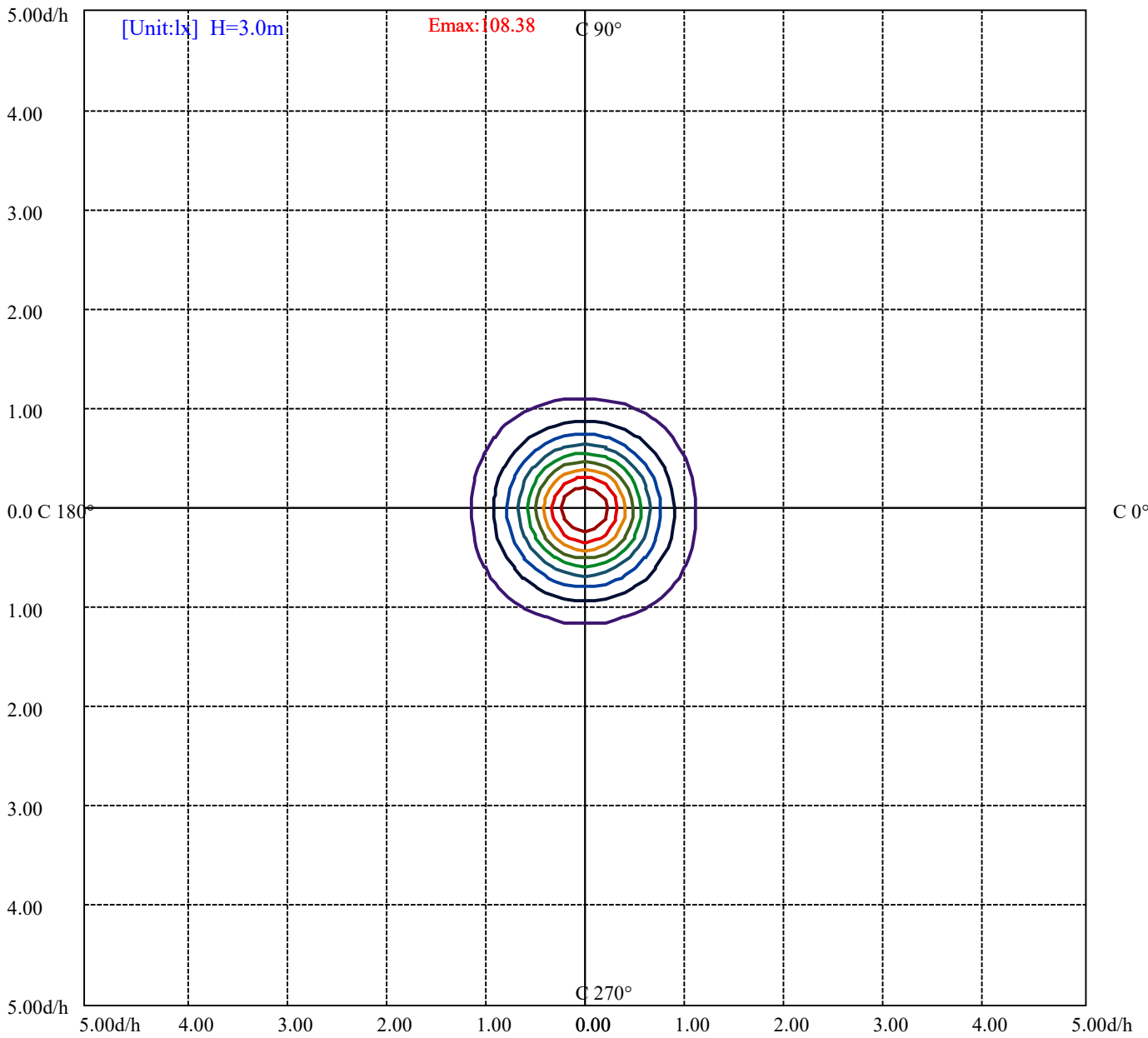
(50%Imax) 499.5424

(60%Imax) 599.4507

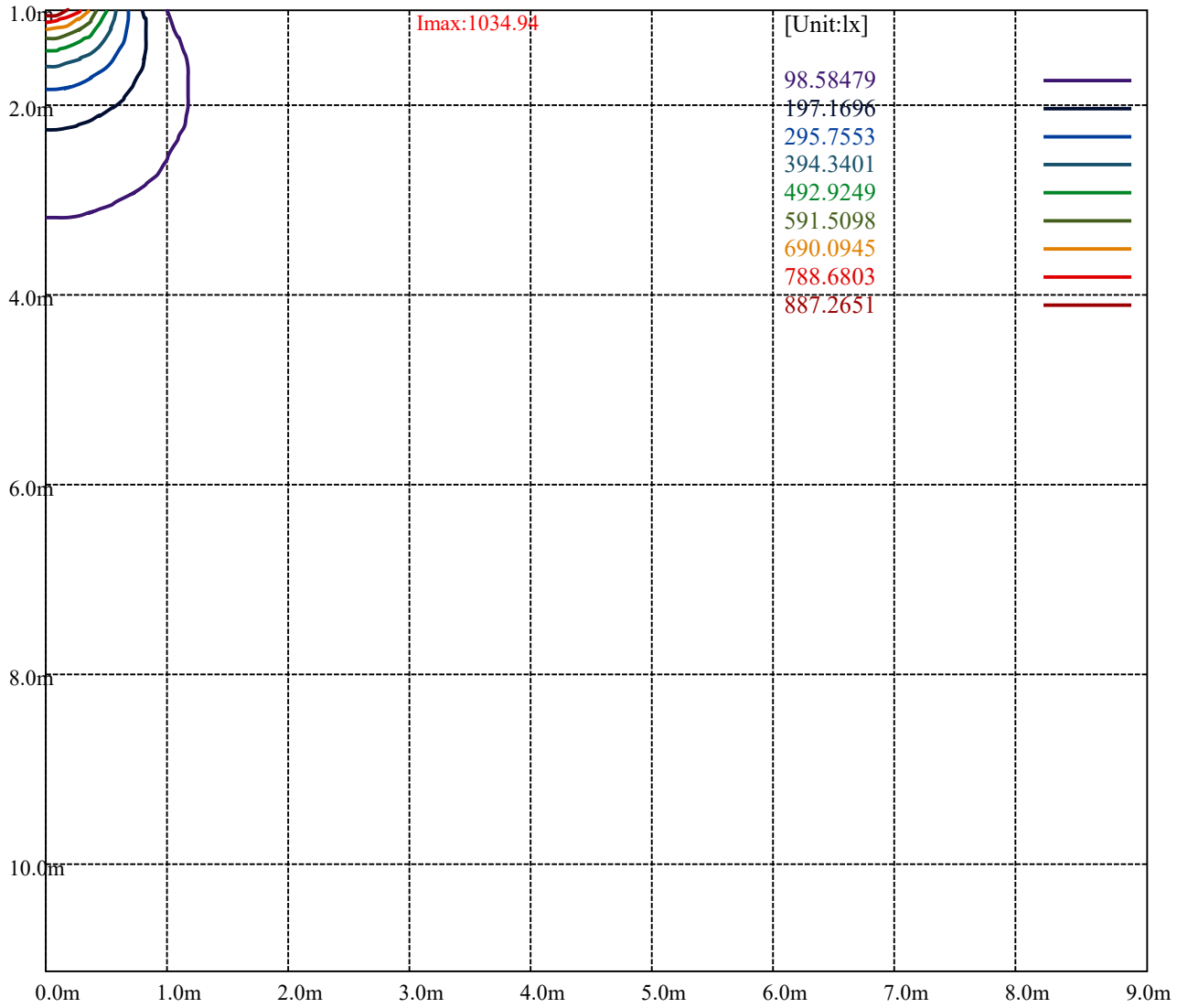
(70%Imax) 699.359

(80%Imax) 799.2682

(90%Imax) 899.1766



(10%Emax)	10.83802	
(20%Emax)	21.67616	
(30%Emax)	32.51418	
(40%Emax)	43.35231	
(50%Emax)	54.19033	
(60%Emax)	65.02847	
(70%Emax)	75.86649	
(80%Emax)	86.70462	
(90%Emax)	97.54264	



Luminance Table

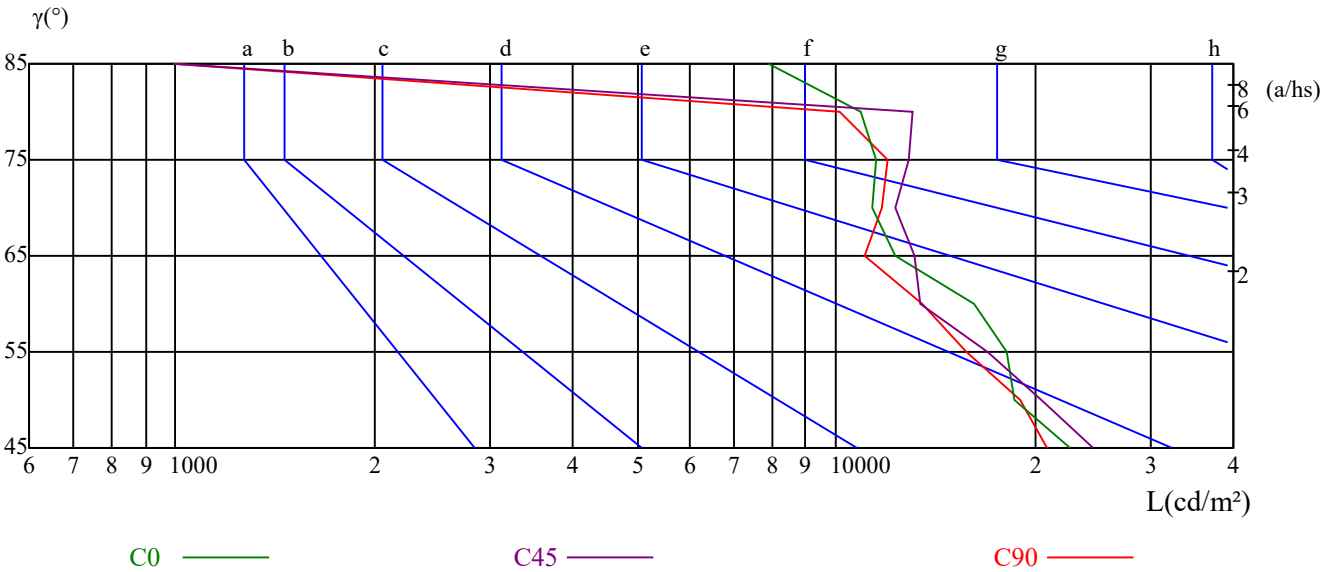
γ	45	50	55	60	65	70	75	80	85
C0	22645	18676	18099	16202	12303	11363	11546	10942	7927
C45	24526	20477	17015	13439	13120	12272	12881	13031	991
C90	20935	19053	15780	13473	11076	11717	11946	10146	991

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
12936	13610	14632	11379	13148	13732	12387	8225	8473

Glare Table

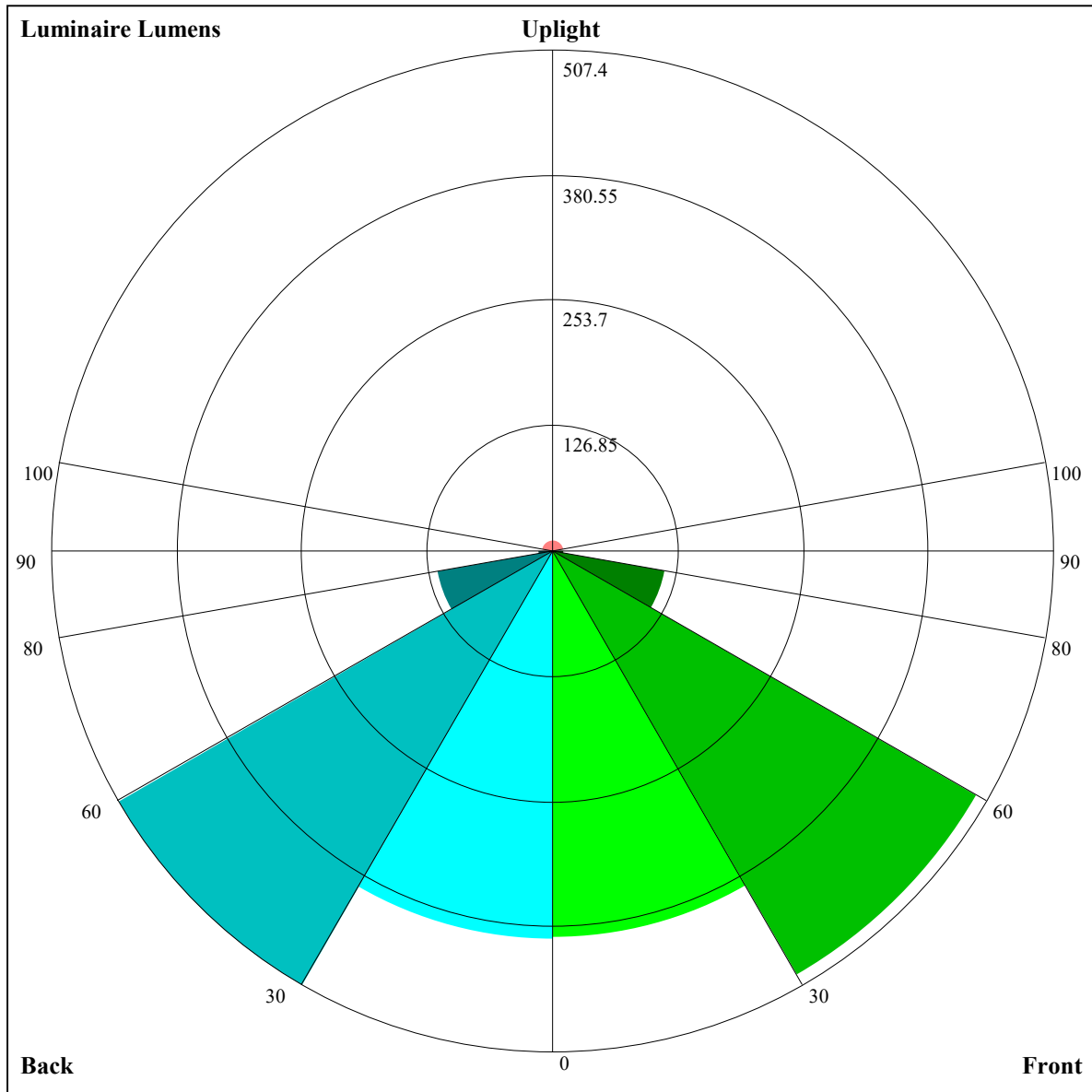
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve



Illumination assessment according UGR											
Rf of Ceiling		70	70	50	50	30	70	70	50	50	30
Rf of Wall		50	30	50	30	30	50	30	50	30	30
Rf of Floor		20	20	20	20	20	20	20	20	20	20
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	17.00	18.44	17.37	18.77	19.10	16.61	18.05	16.98	18.38	18.71
	3H	17.91	19.21	18.31	19.56	19.92	17.59	18.88	17.98	19.24	19.60
	4H	18.36	19.57	18.77	19.94	20.32	18.11	19.32	18.51	19.69	20.07
	6H	18.76	19.89	19.18	20.27	20.68	18.52	19.64	18.94	20.03	20.44
	8H	18.86	19.94	19.29	20.34	20.76	18.58	19.66	19.00	20.05	20.47
	12H	18.90	19.93	19.33	20.33	20.76	18.54	19.57	18.97	19.98	20.41
4H	2H	17.36	18.57	17.77	18.94	19.32	17.04	18.25	17.45	18.62	19.00
	3H	18.49	19.52	18.92	19.92	20.35	18.24	19.27	18.67	19.67	20.10
	4H	19.14	20.05	19.59	20.48	20.93	18.97	19.87	19.41	20.30	20.76
	6H	19.66	20.46	20.13	20.92	21.38	19.48	20.28	19.96	20.74	21.20
	8H	19.83	20.58	20.32	21.04	21.52	19.60	20.34	20.08	20.81	21.29
	12H	19.91	20.61	20.40	21.06	21.59	19.59	20.29	20.09	20.74	21.27
8H	4H	19.39	20.14	19.88	20.60	21.08	19.23	19.98	19.72	20.44	20.93
	6H	20.05	20.67	20.55	21.16	21.67	19.89	20.51	20.39	20.99	21.51
	8H	20.32	20.87	20.85	21.39	21.90	20.09	20.64	20.62	21.16	21.67
	12H	20.43	20.88	20.96	21.41	21.93	20.09	20.55	20.63	21.07	21.60
12H	4H	19.42	20.11	19.91	20.57	21.09	19.26	19.96	19.75	20.41	20.94
	6H	20.14	20.69	20.67	21.21	21.72	19.99	20.53	20.52	21.06	21.56
	8H	20.39	20.85	20.93	21.37	21.90	20.17	20.62	20.70	21.15	21.67
Variation with the observer position at spacings:											
S = 1.0H		0.4/-0.7					0.4/-0.7				
S = 1.5H		0.7/-1.1					0.7/-1.0				
S = 2.0H		1.7/-1.3					1.7/-1.3				
Standard tables:		BK3					BK3				
Uncorrected UGR		5.9					6.2				

UGR calculation is based on CIE Publ. 117 ,S/H = 0.25



Luminaire Lumens:

FL=390.96,FM=496.58,FH=114.78,FVH=11.56

BL=393.22,BM=507.4,BH=119.71,BVH=15.01

UL=2.71,UH=12.52

BUG Rating:B1-U2-G1

Intensity data(cd)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	1021.23	1024.14	996.30	960.99	923.18	828.87	754.08	635.26	531.80
45.0	1010.01	1025.39	986.33	946.03	909.89	808.09	733.31	618.22	509.78
90.0	1034.94	1024.97	973.45	956.42	894.93	808.51	724.58	623.21	485.27
135.0	1019.15	1017.91	1004.61	964.31	908.22	834.68	750.76	660.19	529.73
180.0	1021.23	1013.34	1000.87	983.84	919.44	855.87	762.39	673.07	574.18
225.0	1010.01	1014.58	1005.44	967.64	937.31	870.83	777.77	686.78	588.31
270.0	1034.94	1027.05	1017.08	990.07	965.14	878.31	798.54	707.97	595.79
315.0	1019.15	1028.29	1010.84	962.23	934.40	870.83	779.84	670.16	590.80
360.0	1021.23	1024.14	996.30	960.99	923.18	828.87	754.08	635.26	531.80
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	385.14	288.75	249.70	194.86	125.06	93.48	71.88	45.70	16.62
45.0	417.13	316.59	234.74	161.62	133.37	100.96	80.19	54.43	2.08
90.0	356.06	294.57	217.71	162.03	112.59	96.39	74.37	42.38	2.08
135.0	427.94	343.60	248.45	173.25	144.17	93.90	83.09	64.81	14.13
180.0	425.03	310.36	261.75	190.70	137.94	108.44	69.80	56.92	35.32
225.0	467.41	371.02	278.78	199.01	169.10	110.93	100.13	67.31	35.32
270.0	474.05	338.19	264.24	221.03	164.11	113.84	89.33	51.10	32.41
315.0	468.65	372.26	283.77	201.09	148.32	110.10	78.52	59.83	19.53
360.0	385.14	288.75	249.70	194.86	125.06	93.48	71.88	45.70	16.62
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	0.00	0.00	1.25	0.00	0.00	0.00	0.00	0.00	0.00
45.0	0.00	0.00	0.00	0.00	0.00	0.00	1.25	0.00	1.66
90.0	0.00	0.00	3.74	3.32	9.14	0.00	0.00	5.82	0.42
135.0	0.00	0.00	11.63	2.49	5.40	0.00	0.00	12.05	0.00
180.0	0.00	0.00	10.39	0.00	0.00	0.00	6.65	6.23	0.00
225.0	0.00	12.46	0.00	2.91	13.71	4.57	0.00	3.74	0.00
270.0	11.63	6.23	0.00	0.00	0.00	0.83	0.00	0.00	0.00
315.0	0.00	0.00	0.83	0.00	0.42	0.00	0.00	7.48	1.66
360.0	0.00	0.00	1.25	0.00	0.00	0.00	0.00	0.00	0.00
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	1.25	2.08	0.00	1.25	0.00	2.08	2.91	0.00	0.00
45.0	0.00	0.00	0.00	0.42	7.48	0.00	4.99	10.39	0.00
90.0	10.80	8.72	12.05	14.96	0.00	2.91	0.00	12.46	7.06
135.0	0.00	0.00	0.00	0.00	0.00	0.00	10.80	7.06	0.00
180.0	0.00	0.00	0.00	0.00	0.83	0.00	0.00	0.00	2.08
225.0	1.66	0.00	8.72	10.39	0.00	3.74	12.46	6.23	0.00
270.0	0.83	0.00	0.83	2.91	6.23	0.00	2.91	17.03	0.00
315.0	0.00	14.13	0.00	0.00	0.00	0.00	2.91	1.66	9.97
360.0	1.25	2.08	0.00	1.25	0.00	2.08	2.91	0.00	0.00
C/γ(°)	180.0								
0.0	0.00								
45.0	4.57								
90.0	7.06								
135.0	0.00								
180.0	0.00								
225.0	4.57								
270.0	7.06								
315.0	0.00								
360.0	0.00								